Claim 23, line 1, change "any of claims 20 to 22" to --claim 20--.

Claim 25, line 1, change "any of claims 20 to 24" to --claim 20--.

Claim 28, line 1, delete "or claim 27".

Claim 31, line 1, change "any of claims 26 to 30" to --claim 26--.

Claim 32, line 1, change "any of claims 26 to 31" to --claim 26--.

Claim 34, line 1, delete "or claim 33".

Claim 35, line 1, change "any of claims 32 to 34" to --claim 32--.

Claim 42, line 1, delete "or claim 41".

Claim 43, line 1, change "any of claims 40 to 42" to --claim 40--.

Claim 44, line 1, change "any of claims 40 to 42" to --claim 40--.

Claim 45, line 1, change "any of claims 40 to 42" to --claim 40--.

Claim 46, line 1, change "any of claims 40 to 42" to --claim 40--.

Claim 50, line 1, delete "or claim 49".

Claim 51, line 1, change "any of claims 48 to 50" to --claim 48--.

Please add new claims 53-66 as follows:

A1 CONT'D

--53. A method as claimed in claim 2 wherein a view of the representation (30) in the simulated 3D space is displayed and the scaling variable is entered by a user.

54. A method as claimed in claim 2 comprising the step of acquiring overlapping 2D images from a camera (CM) which is moved relative to the object, the net movement of the camera not being fully constrained.

A1 CONT'D

55. A method as claimed in claim 54 wherein the 2D images are acquired by a hand-held camera (CM).

56. A method as claimed in claim 54 wherein at least one 2D image is acquired by a camera (CM) whose orientation is determined from an output signal of an inertial sensor(G).

57. A method as claimed in claim 2 wherein the 3D representation (30) is generated by projections from positions on a straight line (V) in simulated 3D space which corresponds to the straight line joining respective perspective centres of said 2D images or joining respective perspective centres of said structured optical radiation and 2D image of the illuminated object (3).

58. A method as claimed in claim 2 wherein said scaling variable is varied by the user to enable the 3D representation (R1) to be fitted to another, similarly derived 3D representation (R2).

59. A method as claimed in claim 2 wherein the 3D representation (30) is generated from the intersection of respective projections from spaced apart perspective centres (O_C, O_P), the perspective centres being derived from the mutual offset between a first pair of correspondences (PQ) between respective 2D images (I1, I2) and from a further mutual offset between a second pair of correspondences between respective 2D images, further pairs of correspondences are derived from a search constrained by the above perspective centre determination and the 3D representation of the object is derived from the further pairs of correspondences and the

projections.

A1 CONT'D

60. A method comprising the step of repeating the method of claim 2 by digitally processing further 2D images of the object acquired from different further viewpoints (CMA, CMA') to form a further 3D representation, the first-mentioned 3D representation and the further 3D representation being combined by manipulations in a simulated 3D space involving one or more of rotation and translation, any remaining discrepancies between the 3D representations optionally being reduced or eliminated by scaling one 3D representation relative to the other along at least one axis.

61. Apparatus as claimed in claim 27 comprising display means (5) arranged to display a view of the representation in simulated 3D space, the size of the displayed representation being dependent upon the value of the scaling variable.

62. Image processing apparatus as claimed in claim 61 further comprising a camera (CM) whose position and/or orientation are not fully constrained with respect to the frame of the object, the camera being arranged to acquire said 2D images.

63. Apparatus as claimed in claim 27 which is arranged to generate the 3D representation from the intersection of respective projections from spaced apart perspective centres (pr1, Pr2/pr2'), the perspective centres being derived from the mutual offset between a first pair of correspondences between respective 2D images and from a further mutual offset between a second pair of correspondences between respective 2D images, to derive further pairs

A1 CONCL

of correspondences from a search constrained by the above perspective centre determination and to derive the 3D representation of the object from the further pairs of correspondences and the projections.

64. Apparatus as claimed in claim 27 which is arranged to derive a further 3D representation from further intersections of further projections from further perspective centres (CMA.m CMA'), the apparatus including combining means (4) arranged to combine the first-mentioned 3D representation and the further 3D representation by manipulations in a simulated 3D space involving one or more of rotation and translation, the apparatus further comprising scaling means (BN, W1, W2) arranged to reduce or eliminate any remaining discrepancies between the 3D representations by scaling one 3D representation relative to the other along at least one axis.

65. Apparatus as claimed in claim 64 which is arranged to display both 3D representations (R1, R2) simultaneously and to manipulate them in simulated 3D space in response to commands entered by a user.

66. Apparatus as claimed in claim 64 which is arranged to correct the curvature of field of said first-mentioned and/or said further 3D representation (30', figure 9) resulting from an incorrect or incomplete calculation of a said perspective centre (pr2' - Figure 9).--